

Smart Cities for Parliamentarians

Dr. Beth Coleman

City as Platform lab, University of Waterloo

City as Platform lab: Civic Engagement in the Data Society

In an age of smart technology, big data, and the concomitant threat of a surveillance society, how do we understand the citizen's right to the city and how that right is manifested?

We work to frame a contemporary right to the city.

- sensing the environment

traffic lights, smart thermostat, or cell phone

- reporting real-time data

machine to machine (M2M) environment



MAC sniffer

Camera

microphone



LinkNYC

NYC Fact
No.235
The New Year's
Eve Ball's
crystals can
generate more
than 16 million
colors.

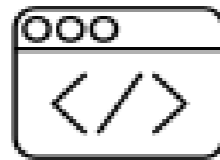
SUPERIOR

AR interface

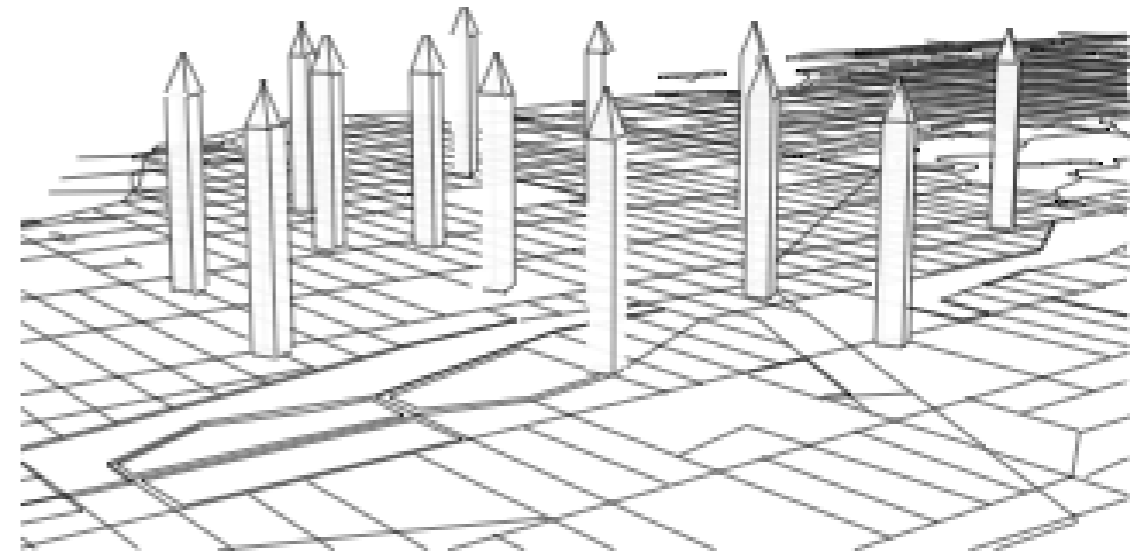
real time data



HoloLens

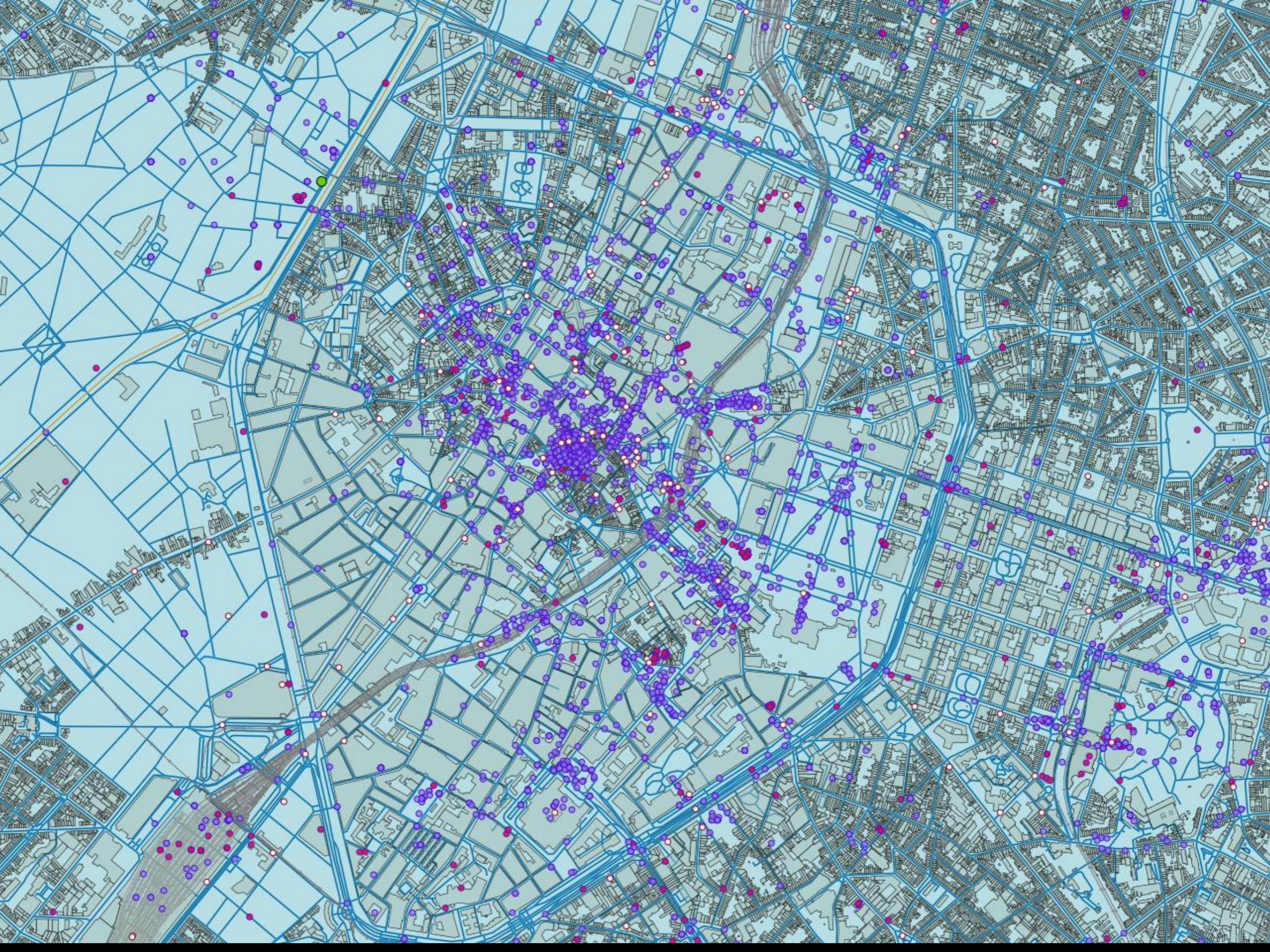


ARkit



actionable location

Data Publics Schematic





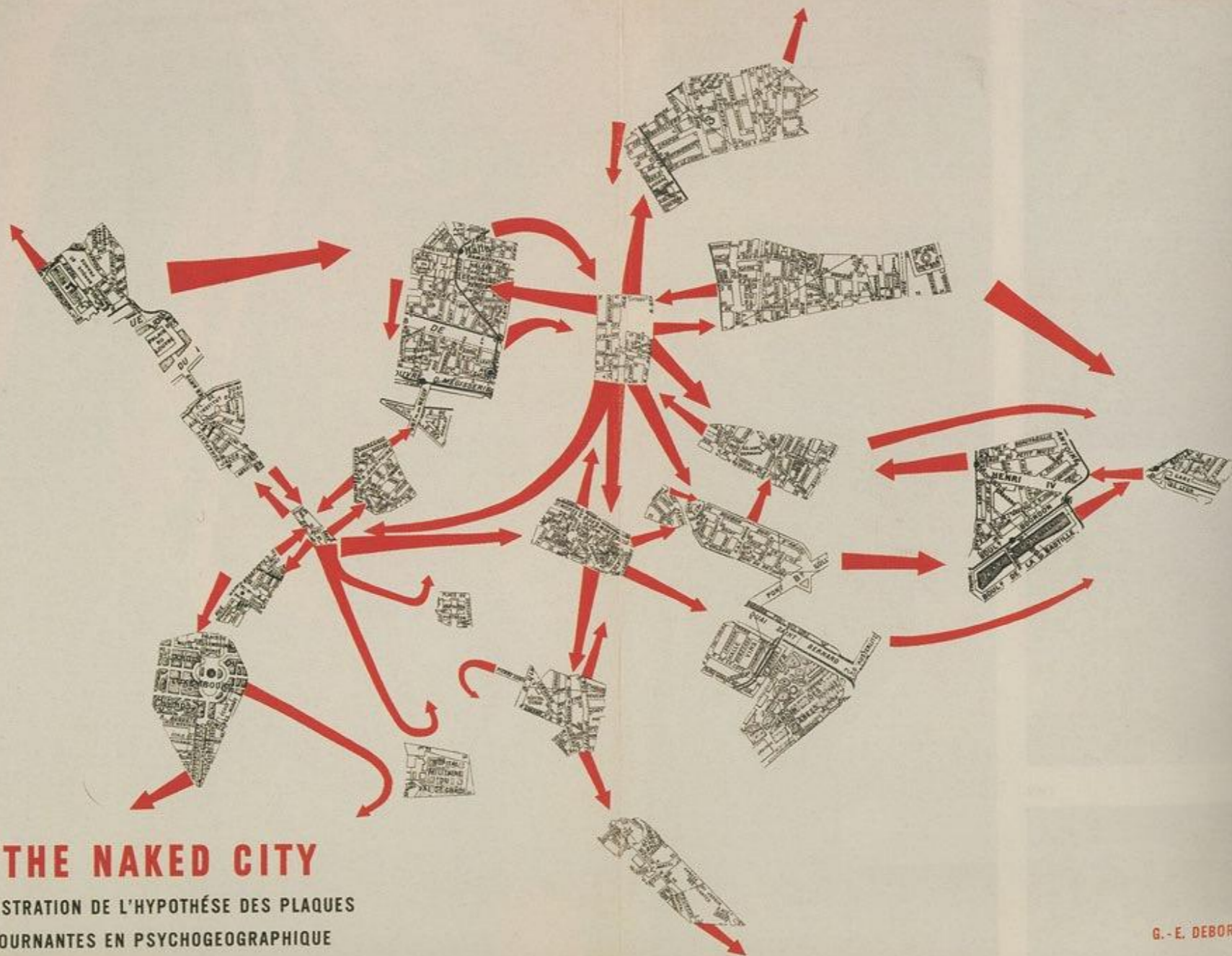


@ DYLAN RAMOS
you could have said that as well:
hey I think you are boring so
get out of my life.

BRUSSEL AIR

Handwritten signature

The Naked City

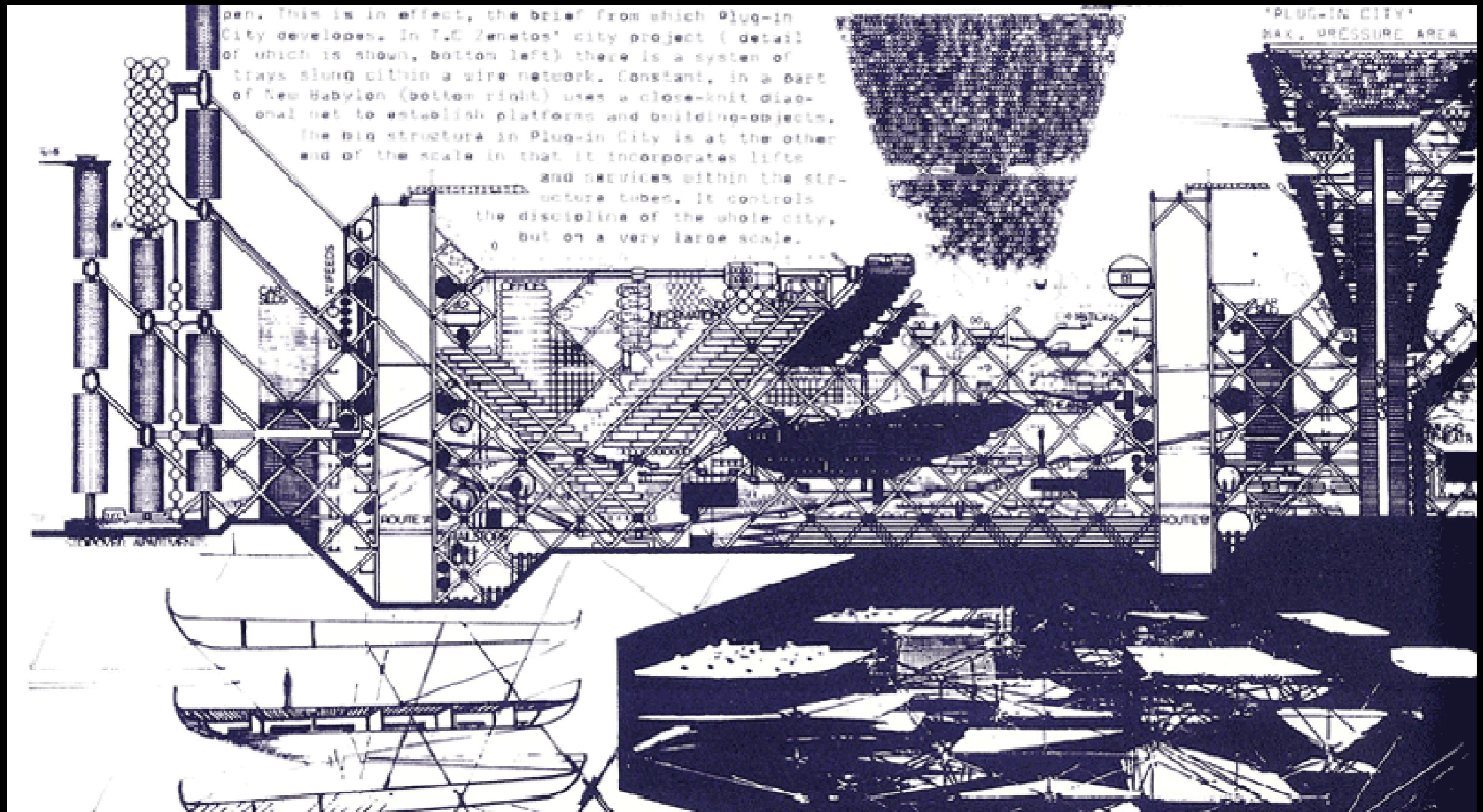


THE NAKED CITY

ILLUSTRATION DE L'HYPOTHÈSE DES PLAQUES
TOURNANTES EN PSYCHOGEOGRAPHIQUE

G. - E. DEBORD

New Babylon



Google Earth



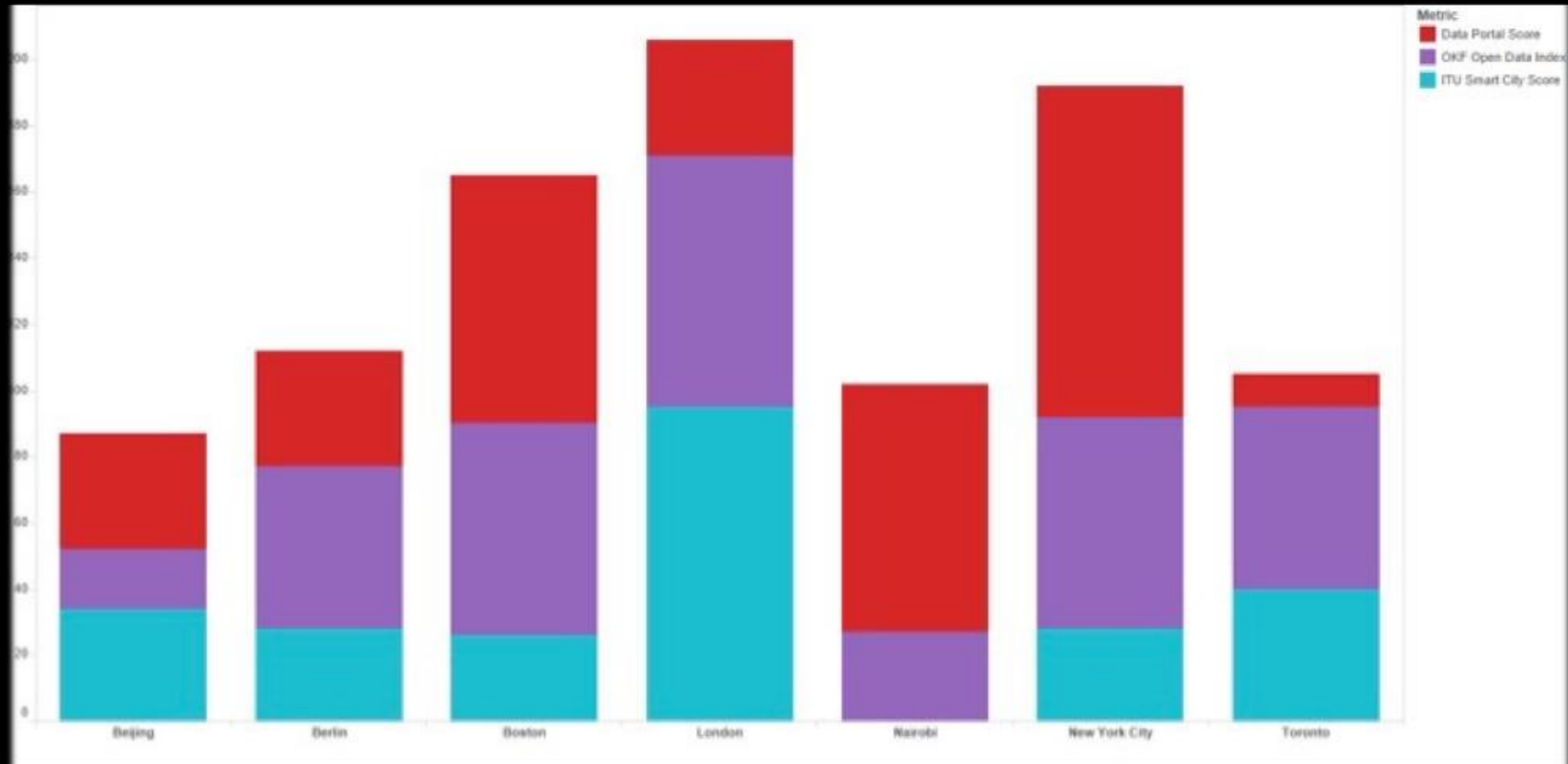
Paris Monumental et Métropolitain



Amsterdam Real-Time



Every City is a Smart City



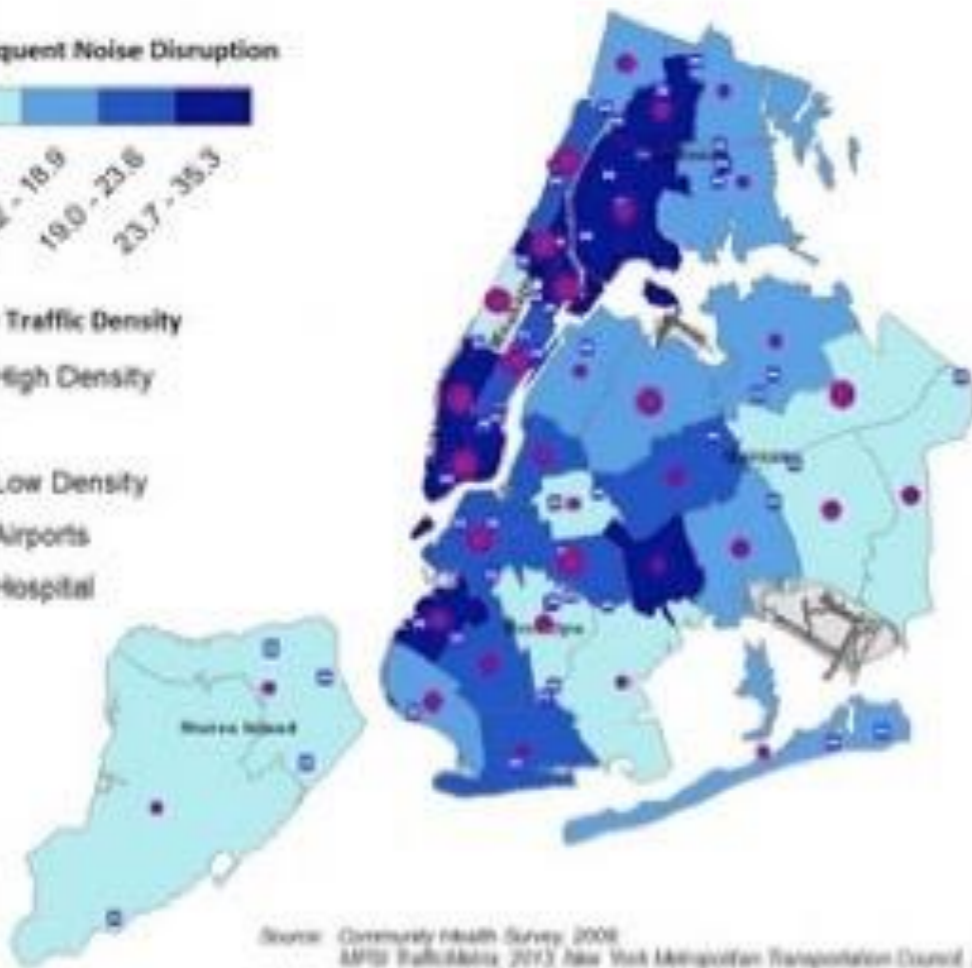
Civic Data Mapping

Frequent Noise Disruption and Average Traffic Density by NYC Neighborhood

% of Frequent Noise Disruption



Average Traffic Density



Source: Community Health Survey, 2008
MTA Traffic Data, 2012, New York Metropolitan Transportation Council, 2012

Legend

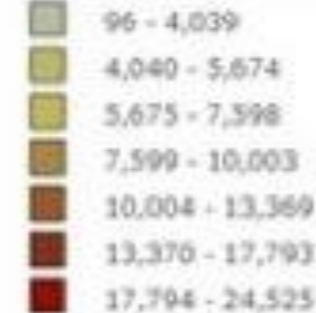
Bike Routes

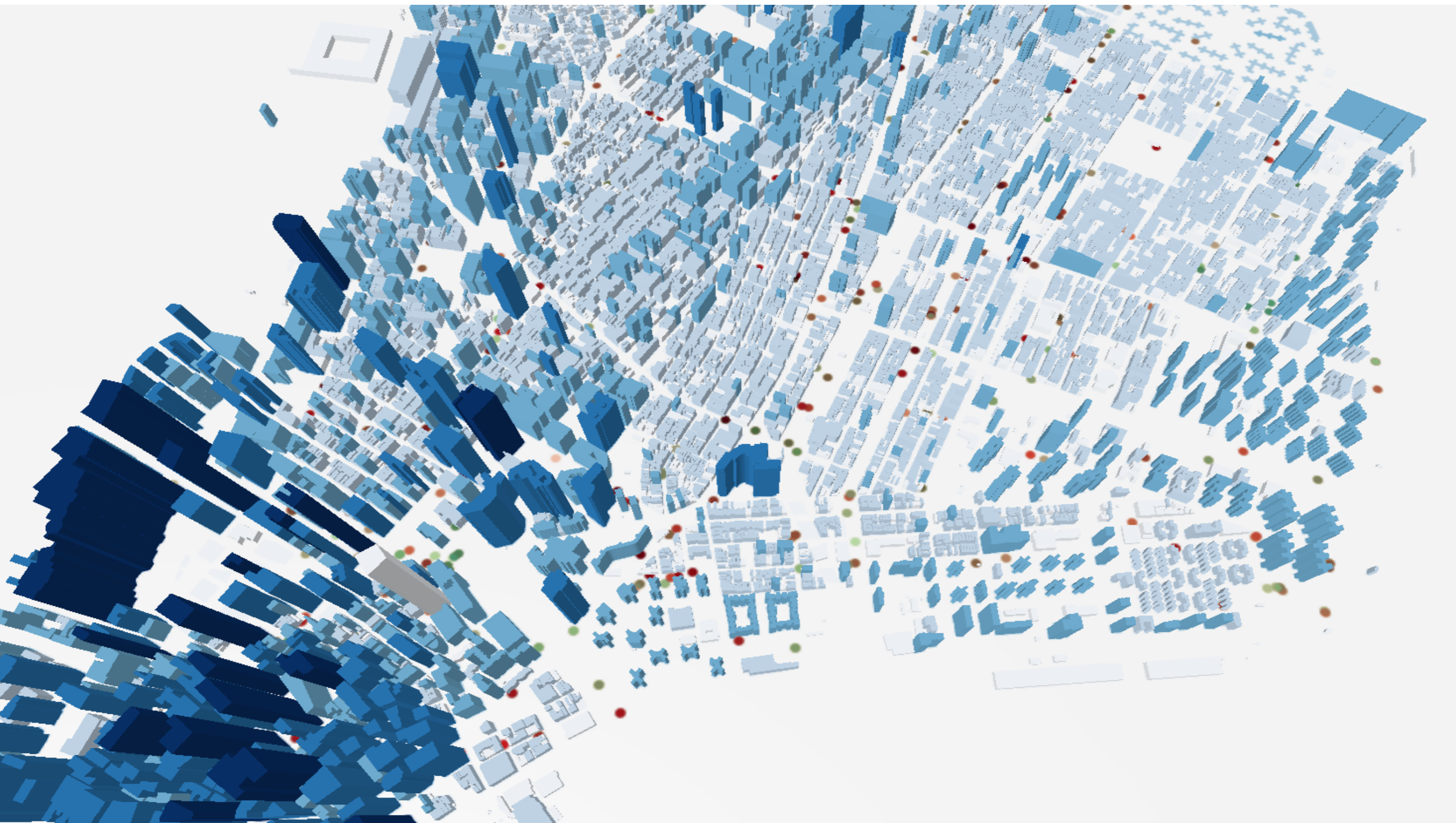
nyc_bike_routes_052013_9k



Bike Lane Violations Density

Bike Lane Violation Citation Density





BREATHING CITY

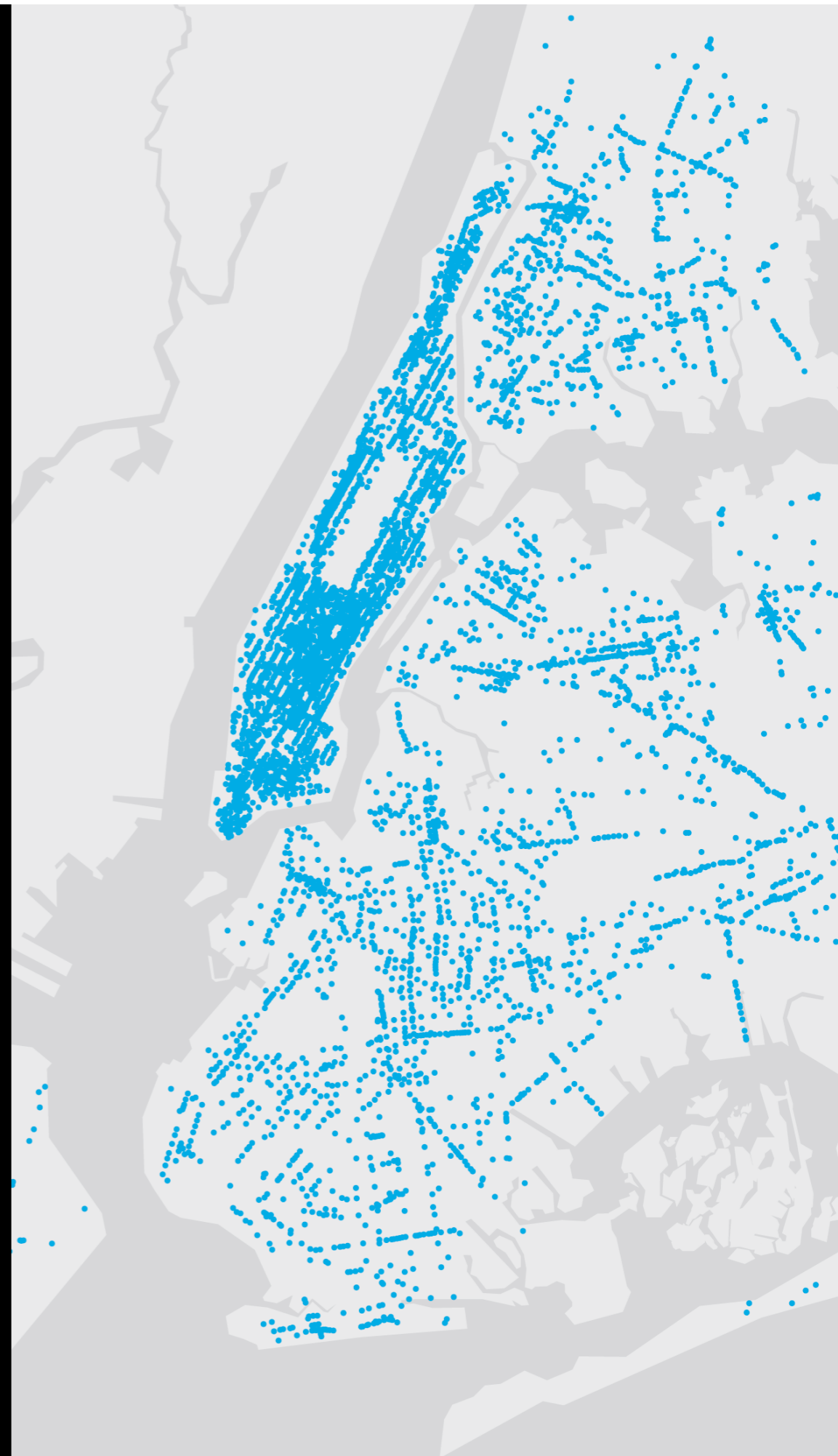
Manhattan's at **Work** and **Home** population by hour

12
am



DARKHORSE
ANALYTICS

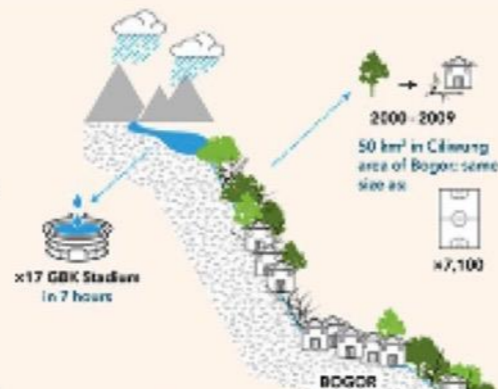
Joey Cherdarchuk | @cherdarchuk | www.darkhorseanalytics.com/blog
Data: US Census Bureau, New York City, US Bureau of Labour Statistics



1. Critical & informed position on smart technology
2. Open data & open door policy with civic sector
3. Data Sovereignty Consortium

Water runoff from Bogor

Land use change from forest or plantations to private homes—many of which are built illegally—means that rain runoff is not absorbed into the land and flows straight downstream.



Water runoff from Depok

Depok's population is growing rapidly as people in Jakarta look for more affordable housing. 20% of Depok residents are Jakarta workers. More houses mean there is less natural land that can absorb water and rain runoff flows more quickly downstream.



Garbage

Urban waste within rivers and neighborhood gutters can block floodgates and other city infrastructure needed to control flooding.



Reservoirs

Reservoirs and lakes are vital for flood prevention during the rainy season and water storage during the dry season. At the time of the Dutch there were 800 reservoirs. Now there are only 280 reservoirs and dams.

Bogor Regency	95 dams
Bogor City	6 reservoirs
Depok City	20 dams
Tangerang Regency	37 dams
Tangerang City	8 reservoirs
Bebasri District	14 dams
Bebasri City	4 reservoirs
DKI Jakarta	16 dams

80% of reservoirs are now in disrepair, too shallow, or they have been turned into areas for housing.

5 million people have no clean water access or supply



Land subsidence

Land subsidence may have the largest influence on future flood risk. 40% of Jakarta is sinking 3–10 cm/year because of excessive groundwater extraction. Many industries, companies and developers extract groundwater illegally.



Why Jakarta Floods

With 13 rivers flowing through the city, it is important to understand how each flooding factor influences flood risk.

Climate change

40% of Jakarta is below sea level and faces rising sea levels (up to 500mm by 2050), tidal waves and rainfall. Extreme daily rainfall (like the 2014 flood) is more frequent.



High tides

There is a maximum range of 1+ meters between high tide and low tide. High tides that coincide with monsoons can breach seawalls and cause extreme flooding (like in 2007 when half of Jakarta flooded).



Drained delta

Most of Jakarta was once a vast swampy land that has since been drained and covered with surfaces that do not absorb water such as roads and housing.





MAKING A CIVIC SMART CITY

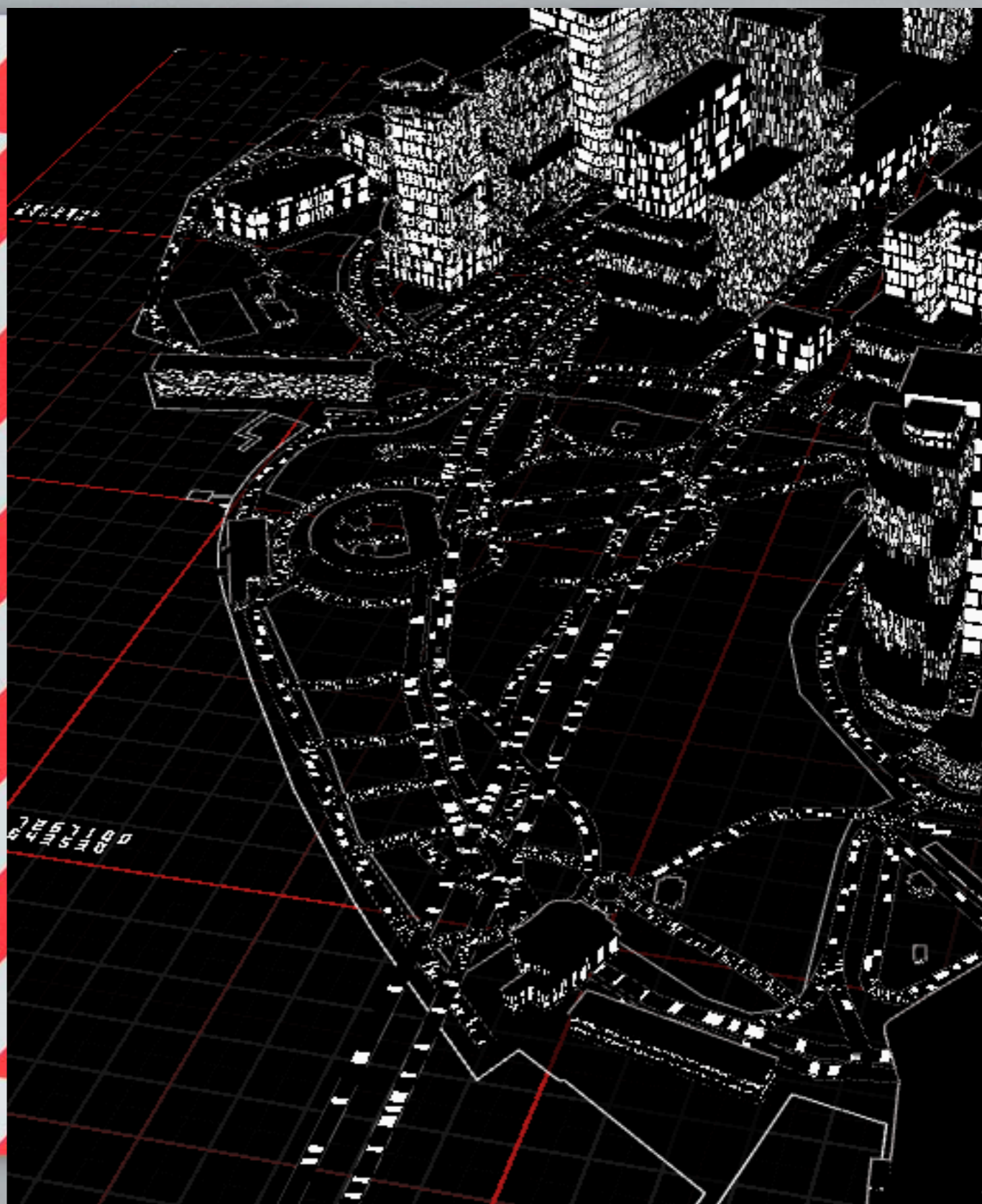
DESIGNING FOR PUBLIC
VALUE AND CIVIC
PARTICIPATION

WRITTEN BY

ERIC GORDON
BETH COLEMAN
JOHN HARLOW
MELISSA TENG
LINDSAY MEANING

No. 05
2018





Thank You